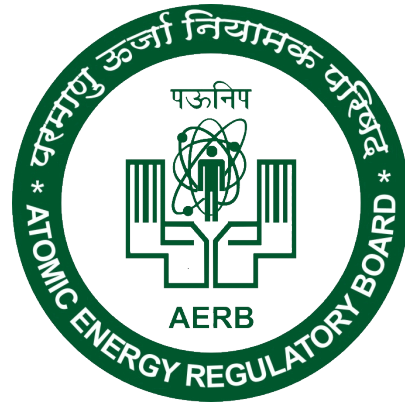
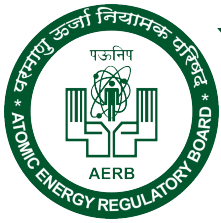


IMPLEMENTATION OF RADIOACTIVE SOURCE SECURITY REGULATORY INFRASTRUCTURE IN ELECTRONIC LICENSING OF RADIATION APPLICATION (eLORA) - AN INDIAN PERSPECTIVE



Bibekananda Mishra, Ph.D.
bibek@aerb.gov.in
Scientific Officer
Atomic Energy Regulatory Board
INDIA



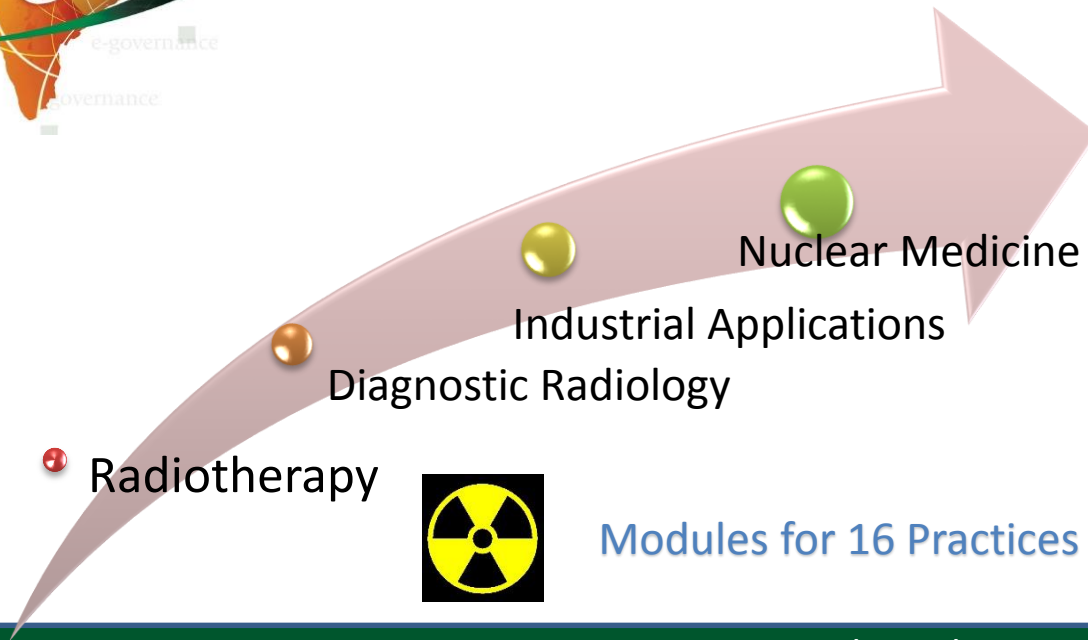
In the presentation....

- Over view of Electronic Licensing Of Radiation Application (eLORA)
- Regulatory Requirements for Security Measures at Radiation Facility
- Implementation of radioactive source security regulatory infrastructure in eLORA.

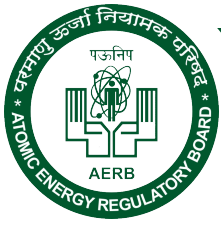


About eLORA

- eLORA is an e-Governance System for complete automation of regulatory processes associated with the use of ionizing radiation in India.



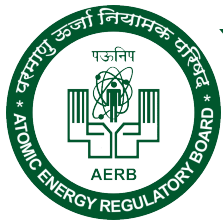
Modules for 16 Practices implemented.



Objective of eLORA

- Web based system to provide regulatory services to AERB stakeholders
 - easily accessible → instantaneous submission → cater large no. of users
- Workflow Automation
 - Faster processing and communication
 - Many of the process are automated → instantaneous approval
- *Enhance transparency, efficiency and reliability in dealings*
- Attempt to paperless office





Overview of eLORA System



Internal Stakeholders

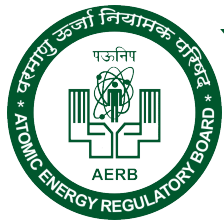
eLORA infrastructure

Back Office application for
AERBites
Back Office Module (BOM)



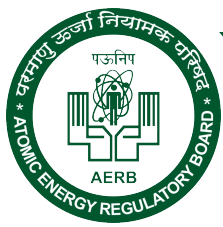
Web interface
Internet Interface Module (IIM)

External Stakeholders



AERB Stakeholders of Radiation Regulation





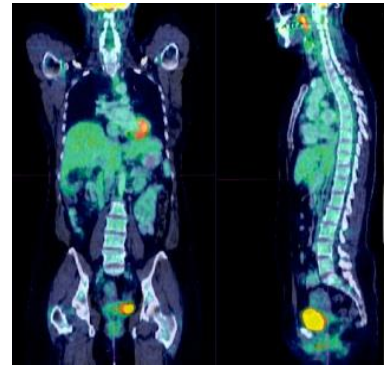
Typical Usage of Radiation in Medicine



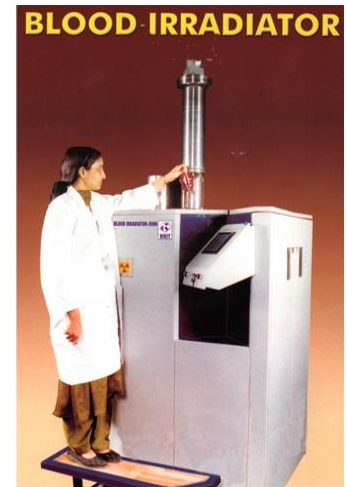
Treatment of Cancer through Radiotherapy



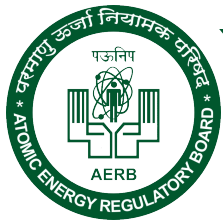
Medical Diagnosis and Cardiological Procedures Using X-rays



Nuclear Medicine for diagnosis, PET examination and treatment



Blood irradiation to prevent Transfusion-Associated Disease



Typical Usage of Radiation in Industry

Irradiation of food for increasing self life
Irradiation of medical products for sterilization

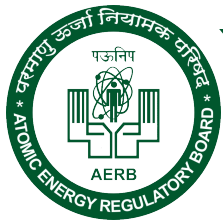


X-ray baggage scanning system for security check



To inspect engineering quality of weld and crafts through Non Destructive Testing

Level gauging in distillation columns in petroleum refineries



Regulatory Control of Radiation Sources

Radiological Safety Division (RSD) of AERB is responsible for regulations with respect to safe use of ionising radiation

System of Regulatory Control

Issued by Central Government

Act

[Atomic Energy Act, 1962]

Rules

[Atomic Energy (Radiation Protection) Rules, 2004]

Notifications

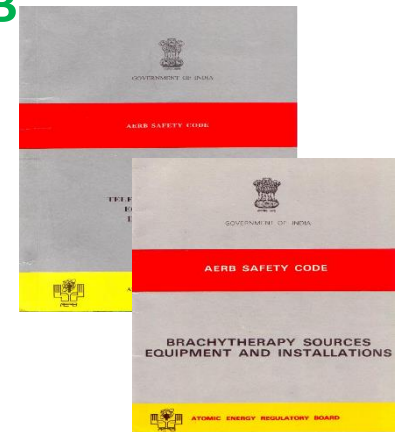
Published by AERB

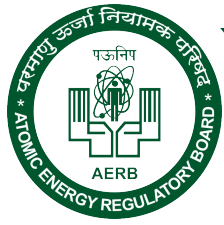
Safety Codes

Safety Standards

Safety Guides

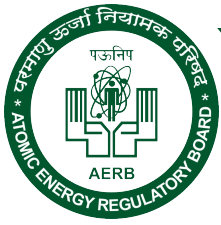
Safety Manuals





Regulatory Document For Security of Radioactive Material

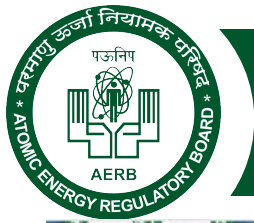
- ATOMIC ENERGY REGULATORY BOARD, GOVT. OF INDIA, SECURITY OF RADIOACTIVE SOURCES IN RADIATION FACILITY (AERB SAFETY GUIDE NO. AERB/RF-RS/SG-1), (2011)
- ATOMIC ENERGY REGULATORY BOARD, GOVT. OF INDIA, SECURITY OF RADIOACTIVE MATERIAL DURING TRANSPORT (AERB/NRF-TS/SG-10), (2016)




Security Plan in eLORA

Institute Registration: Part of the requirement for security plan submission are taken care by institute registration process wherein credentials of the user institute as desired from the security view point are reviewed considering the hazard associated with the radiation facility. (PVC, Registered documents with Other Govt. Authority.)


Employee Management: The employee management module tracks the registered safety professionals, adds one layer of verification from the employer end. Facility in place to tags the employees with their PVC while submitting the security plan .



Provisions in eLORA



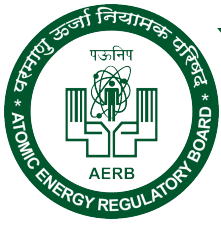
Atomic Energy Regulatory Board
e-Licensing of Radiation Applications (eLORA) System



Institute: Tata Memorial Hospital
(MH-00001)

			Nominate RSO
			Non-utilization of Approval
			Employer Change Initiation
			NC Response Screen
			Safety Status Report
			Feedback on Grant of Consent
			Feedback on Regulatory Inspection
			Enforcement Response Screen
			Exposure Investigation Report
			Update Operational Status
			Security Plan
			decommissioning of the source(s)/equipment(s).
			Update Operational Status with application no. 20-527

My Inbox	
	Date and Time
Change Password	
Change User ID	
Instrument Management	29/01/2020 04:11 PM
My Applications	Common Forms
My Casefiles	Incident Reporting
My Institute Details	Radio Therapy Practice
Regulatory Forms	Transport



Security Plan Contd.

Instrument Management: It records details of security devices and safety instruments. eLORA system does continuous surveillance of the recorded details and lists the Non-Compliances due to its non-availability, invalid calibration etc. The complete history can be tracked through various reports available in the system.

Site and Layout: The site and layout application submission process and its approval for the radiation facilities suffice the requirement for description of the environment, building and/or facility where the source is used or stored by providing clear layout / diagram of the radiation facility and security systems installed or proposed to be installed in the radiation facility with proper indication in the layout drawings. The Site and Layout approval follows multiple review system.



Security Plan Contd.

Regulatory Application Form: One of the form designed to submit security plan. Preparation of the plan is supported by a checklist and a sample security plan (downloadable from eLORA help section)

- Part of the submission is generated by the system (Institute, Employer, Licensee, RSO etc. details along with along with other vital information such as PVC, Registration of the plan with Law & Enforcement Authority, submission number and submission type etc.)
- Supporting part to the application is uploaded from the user end while submitting the application form (such as descriptive part of the Security Plan)



Security Plan Contd.

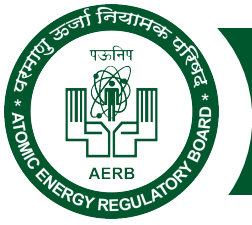
- **Broad Description In the Security Plan:**
- Perceived Threats to the radiation facility
- Objectives of Security Plan
- Technical Measures
- Administrative Measures
- Security related aspects in emergency plan



Review of Security Plan

Review:

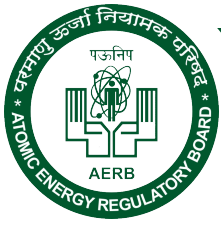
- ✓ Case Officer at BOM refers an inbuilt checklist through integrated workflow module.
- ✓ From the source categorization feature available in eLORA, the present category of the source(s) are being referred.
- ✓ For the sources below Category 1, one tier review completes the processing of the submission.
- ✓ For the sources above Category 1, multi tier review are conducted.



Review of Security Plan

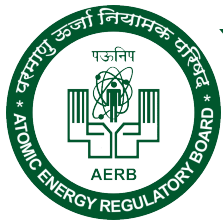
Review:

- ✓ During the review process, Case Officer can refer all records in case file (including legacy documents), can view inspection findings in the integrated workflow module.
 - ✓ Provision is also available to send the application for peer/specialist review from the worklist page.
 - ✓ All review comments are accessible from one place.
- ❑ Based on the source category and the details provided in the security plan, a conscious decision taken and accordingly the stakeholder are communicated through eLORA.**



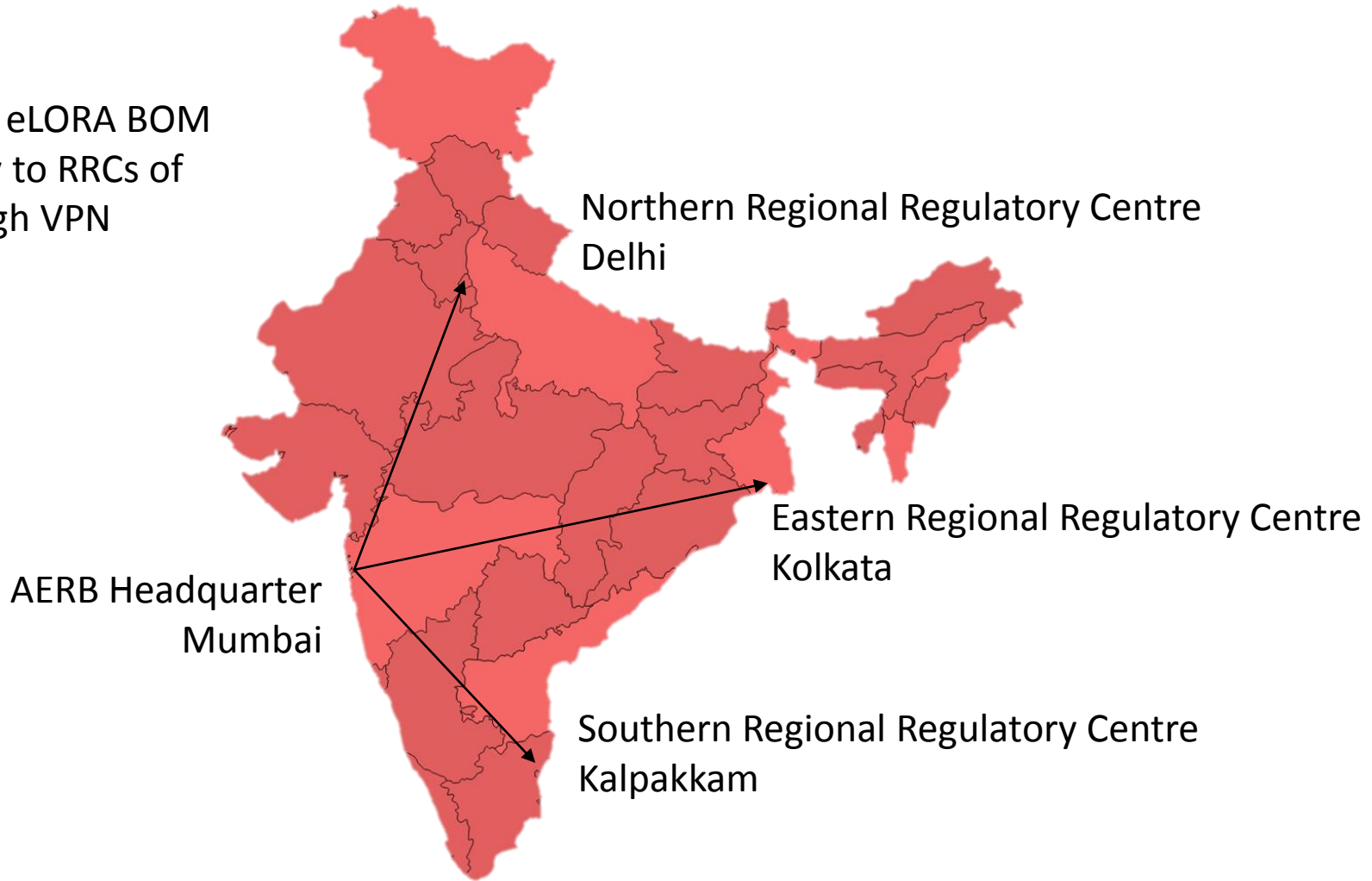
Salient Features of the Module

- ✓ This module supports various upload provisions catering the need for first submission and subsequent resubmissions/ad-hoc submissions owing to the modification/change in facility layout/design/occupancy, change in functional status of the radiation sources, augmentation of new radiation sources, change in security scenario, increased threat perception etc.
- ✓ This Module is scalable to extend the System for other coordinating Government Authorities involved in implementing the security measures at radiation facilities.
- ✓ Security Plan is institution-centric irrespective of various practices available at the institute. Accordingly, interdependence across the practices, sharing of resources, and credit from safety systems are part of this Module in eLORA.



eLORA Connectivity

Establishing eLORA BOM connectivity to RRCs of AERB through VPN



The mission of the AERB is to ensure the use of ionising radiation and nuclear energy in India does not cause undue risk to the health of people and the environment.



Thank You ...!